

PRELIMINARY REMARKS

Claims 1 to 3 and 6 to 11 as set forth in Appendix II of this paper are now pending in this case. Claims 1 and 7 have been amended and Claims 10 and 11 have been added, as indicated in Appendix I of this paper.

Applicants have adopted the Examiner's suggestion to specify the liquid polyalkylene glycol in accordance with the disclosure on page 3, indicated lines 9 to 12, of the application as a "*liquid polyethylene glycol having a molecular weight between 88 and 1000*", and have amended Claims 1 and 7 accordingly. Additionally, applicants have entered new Claims 10 and 11 which specify the molecular weight of the liquid polyethylene glycol referenced in Claims 1 and 7 as being between 100 and 600. The respective range is also supported by the disclosure on page 3, indicated lines 9 to 12, of the application. No new matter has been added.

In the "Notes/Suggestion" section of the final rejection the Examiner remarked that Claims 7 to 9 are drawn up in the product-by-process format, and that the patentability of the claimed subject matter is determined without regard to the process limitations. In this regard, it is respectfully submitted that applicants' experiments which are described on page 20, indicated line 43 et seq., of the application clearly show that the product which is obtained in accordance with applicants' process exhibits distinctly advantageous properties which are not found in the graft copolymers of polyvinyl esters known in the art.

It is well settled that the invention as a whole which is referenced in Section 103 is not limited to the subject matter which is literally recited in a claim but also includes the properties which are inherent in the particular combination of the claimed features which are disclosed in the application<sup>1)</sup>. Also, "*All words in a claim must be considered in judging the patentability of that claim against the prior art.*"<sup>2)</sup> While "... *claims yet unpatented are to be given the broadest reasonable interpretation consistent with the specification* ..." <sup>3)</sup>, it would clearly be unreasonable in light of applicants' show-

1) Note, for example, *In re Antonie*, 559, F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963).

2) *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

3) *In re Prater and Wei*, 162 USPQ 541, 550 (CCPA 1969), emphasis added.

ing to disregard the requirements of the process of making the graft copolymers defined in applicants' claims, since those requirements inherently provide for the particular and advantageous properties of applicants' graft copolymers. Favorable reconsideration of the Examiner's position is, therefore, respectfully solicited.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

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Encl.: THE CHANGES IN THE CLAIMS (Appendix I)  
THE AMENDED CLAIMS (Appendix II)

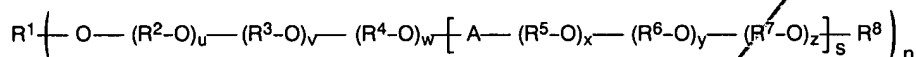
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## A P P E N D I X I:

THE CHANGES IN THE CLAIMS (version with markings, showing the changes made):

1. (three times amended) A process for preparing graft copolymers of polyvinyl esters by polymerization of

- a) at least one vinyl ester of aliphatic C<sub>1</sub>-C<sub>24</sub>-carboxylic acids in the presence of
- b) polyethers which are solid at room temperature and have the general formula I



in which the variables have the following meaning, independently of one another:

R<sup>1</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-, polyalcohol residue;

R<sup>8</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-;

R<sup>2</sup> to R<sup>7</sup> -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH<sub>2</sub>-CH(CH<sub>3</sub>)-, -CH<sub>2</sub>-CH(CH<sub>2</sub>-CH<sub>3</sub>)-, -CH<sub>2</sub>-CHOR<sup>10</sup>-CH<sub>2</sub>-;

R<sup>9</sup> C<sub>1</sub>-C<sub>24</sub>-alkyl;

R<sup>10</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-;

A -C(=O)-O-, -C(=O)-B-C(=O)-O-, -C(=O)-NH-B-NH-C(=O)-O-;

B -(CH<sub>2</sub>)<sub>t</sub>-, arylene, optionally substituted;

n 1 to 8;

s 0 to 500;

t 1 to 12;

u 1 to 5000;

v 0 to 5000;

w 0 to 5000;

x 1 to 5000;

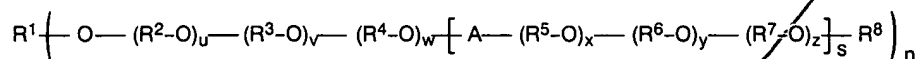
y 0 to 5000;

z 0 to 5000

c) and, where appropriate, at least one other monomer using a free-radical initiator system, wherein liquid [~~polyalkylene~~] polyethylene glycol having a molecular weight between 88 and 1000 is used as solvent for the free-radical initiator.

7. (three times amended) Graft copolymers of polyvinyl esters which are the products of the process of polymerization of

- a) at least one vinyl ester of aliphatic C<sub>1</sub>-C<sub>24</sub>-carboxylic acids in the presence of
- b) polyethers which are solid at room temperature and have the general formula I



in which the variables have the following meaning, independently of one another:

R<sup>1</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-, polyalcohol residue;

R<sup>8</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-;

R<sup>2</sup> to R<sup>7</sup> -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH<sub>2</sub>-CH(CH<sub>3</sub>)-, -CH<sub>2</sub>-CH(CH<sub>2</sub>-CH<sub>3</sub>)-, -CH<sub>2</sub>-CHOR<sup>10</sup>-CH<sub>2</sub>-;

R<sup>9</sup> C<sub>1</sub>-C<sub>24</sub>-alkyl;

R<sup>10</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-;

A -C(=O)-O-, -C(=O)-B-C(=O)-O-, -C(=O)-NH-B-NH-C(=O)-O-;

B -(CH<sub>2</sub>)<sub>t</sub>-, arylene, optionally substituted;

n 1 to 8;

s 0 to 500;

t 1 to 12;

u 1 to 5000;

v 0 to 5000;

w 0 to 5000;

x 1 to 5000;

y 0 to 5000;

z 0 to 5000

- c) and, where appropriate, at least one other monomer using a free-radical initiator system, wherein liquid [polyalkylene] polyethylene glycol having a molecular weight between 88 and 1000 is used as solvent for the free-radical initiator.

New Claims 10 and 11 have been added.

10. (new) The process of claim 1, wherein the molecular weight of the liquid polyethylene glycol is between 100 and 600.

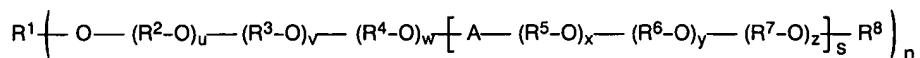
11. (new) The graft copolymer defined in claim 7, which is produced using liquid polyethylene glycol having a molecular weight between 100 and 600 as solvent for the free-radical initiator.

## A P P E N D I X II:

THE AMENDED CLAIMS (clean version of all claims):

1. (three times amended) A process for preparing graft copolymers of polyvinyl esters by polymerization of

- a) at least one vinyl ester of aliphatic C<sub>1</sub>-C<sub>24</sub>-carboxylic acids in the presence of
- b) polyethers which are solid at room temperature and have the general formula I



in which the variables have the following meaning, independently of one another:

R<sup>1</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-, polyalcohol residue;

R<sup>8</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-;

R<sup>2</sup> to R<sup>7</sup> -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH<sub>2</sub>-CH(CH<sub>3</sub>)-, -CH<sub>2</sub>-CH(CH<sub>2</sub>-CH<sub>3</sub>)-, -CH<sub>2</sub>-CHOR<sup>10</sup>-CH<sub>2</sub>-;

R<sup>9</sup> C<sub>1</sub>-C<sub>24</sub>-alkyl;

R<sup>10</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-;

A -C(=O)-O-, -C(=O)-B-C(=O)-O-, -C(=O)-NH-B-NH-C(=O)-O-;

B -(CH<sub>2</sub>)<sub>t</sub>-, arylene, optionally substituted;

n 1 to 8;

s 0 to 500;

t 1 to 12;

u 1 to 5000;

v 0 to 5000;

w 0 to 5000;

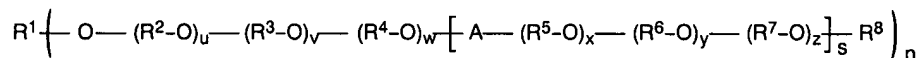
x 1 to 5000;

y 0 to 5000;

z 0 to 5000

c) and, where appropriate, at least one other monomer using a free-radical initiator system, wherein liquid polyethylene glycol having a molecular weight between 88 and 1000 is used as solvent for the free-radical initiator.

- P1 Contd.*
2. (amended) A process as claimed in claim 1, wherein the solution of the free-radical initiator is added continuously throughout the polymerization reaction time.
  3. (amended) A process as claimed in claim 1, wherein liquid polyethylene glycol is used as solvent for the free-radical initiator at room temperature.
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- P2*
6. (amended) A cosmetic, dermatological, hygienic or pharmaceutical dosage form comprising at least one of the polymers prepared by a process as claimed in claim 1 in addition to conventional excipients.
  7. (three times amended) Graft copolymers of polyvinyl esters which are the products of the process of polymerization of
    - a) at least one vinyl ester of aliphatic C<sub>1</sub>-C<sub>24</sub>-carboxylic acids in the presence of
    - b) polyethers which are solid at room temperature and have the general formula I



in which the variables have the following meaning, independently of one another:

R<sup>1</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-, polyalcohol residue;

R<sup>8</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-, R<sup>9</sup>-NH-C(=O)-;

R<sup>2</sup> to R<sup>7</sup> -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH<sub>2</sub>-CH(CH<sub>3</sub>)-, -CH<sub>2</sub>-CH(CH<sub>2</sub>-CH<sub>3</sub>)-, -CH<sub>2</sub>-CHOR<sup>10</sup>-CH<sub>2</sub>-;

R<sup>9</sup> C<sub>1</sub>-C<sub>24</sub>-alkyl;

R<sup>10</sup> hydrogen, C<sub>1</sub>-C<sub>24</sub>-alkyl, R<sup>9</sup>-C(=O)-;

A -C(=O)-O-, -C(=O)-B-C(=O)-O-, -C(=O)-NH-B-NH-C(=O)-O-;

B -(CH<sub>2</sub>)<sub>t</sub>-, arylene, optionally substituted;

n 1 to 8;

s 0 to 500;

t 1 to 12;

u 1 to 5000;

v 0 to 5000;

w 0 to 5000;

x 1 to 5000;

y 0 to 5000;

z 0 to 5000

*D2  
contd*  
c) and, where appropriate, at least one other monomer using a free-radical initiator system, wherein liquid polyethylene glycol having a molecular weight between 88 and 1000 is used as solvent for the free-radical initiator.

8. (amended) Coating agents, binders or film-forming excipients for pharmaceutical dosage forms containing a polymer produced by the process of claim 1.

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9. Cosmetic, hygienic or dermatological preparations containing a polymer produced by the process of Claim 1.

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*D3*  
10. (new) The process of claim 1, wherein the molecular weight of the liquid polyethylene glycol is between 100 and 600.

11. (new) The graft copolymer defined in claim 7, which is produced using liquid polyethylene glycol having a molecular weight between 100 and 600 as solvent for the free-radical initiator.

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